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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/287,332	04/07/99	GAUTVIK K	16777/309

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EXAMINER	
LANDSMAN, R	
ART UNIT	**PAPER NUMBER**
1647	11

DATE MAILED: 06/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/287,332	GAUTVIK ET AL.	
	Examiner	Art Unit	
	Robert Landsman	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☒ Responsive to communication(s) filed on *4/18/01* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-37* is/are pending in the application.

4a) Of the above claim(s) *21-23 and 29-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-28 and 34-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

6/29/01

DETAILED ACTION

1. Formal Matters

A. Claims 1-20 were pending in the application. Claims 1-20 were cancelled and new claims 21-37 were added. These claims were subject to restriction. In Paper No.10 Applicants elected Group II, claims 24-29 and 34-37. Therefore, claims 24-29 and 34-37 are currently pending in the application. Since Applicants did not traverse this restriction, it will be treated as an election without traverse. This restriction is made FINAL.

2. Specification

A. The specification is objected to because:

i. Page 8, line 19 should say "clone" not "close."

ii. Page 9, line 37 should say "marker" not "market."

Appropriate correction is required.

B. The drawings are objected to because:

i. The Brief Description of Figures for Figures 6 and 7 does not match the appropriate figures. The descriptions appear to be switched.

ii. The description of Figure 9 refers to parts A-E, however, the Figure only shows parts A and B.

iii. Figure 10 has handwriting which labels these Figures as 'fig 1 A-F' though it is Figure 10. The Brief Description of Figures should also refer to Figures 10 A-F.

Appropriate correction is required for all of these points.

3. Claim Objections

A. Claims 27, 34 and 36 are objected to under 37 CFR 1.75 as being a substantial duplicate of claim 24. Claim 28 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 25. Claim 29 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 26. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Claims 27-29, 34 and 36 all recite various methods to obtain recombinant hPTH. However, the claims are drawn to recombinant hPTH and are, therefore, substantial duplicates of claims 24-26. In other words, there is no difference in the actual hPTH protein, regardless of the method used to produce it.

4. Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

A. Claims 34 and 35 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants claim an "optimized consensus signal sequence." However, Applicants have provided no written description of what this "optimized" sequence is. The specification provides a written description of only a small number of these consensus sequences (claim 35). No other species are described, or structurally contemplated, within the instant specification. Therefore, one skilled in the art cannot reasonably visualize or predict critical amino acid residues which would structurally characterize the "optimal" consensus sequences of these signal proteins.

5. Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24-29 and 34-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 24 is confusing since it is not clear in part (a)(1) what a "STE13 recognition" is. It appears that the claim may need to recite that this is, for example, a "domain," "site," or sequence **without adding new matter.**

B. Claims 24-29 and 34-37 are rendered indefinite because of the phrase "composition comprising." A composition comprises two or more substances. However, these claims are directed to a composition in which only one substance (hPTH) is recited. It is not known what else this composition comprises.

C. Claims 24-29 and 34-37 are confusing since it is not clear if and where in the sequence the leader sequence is cleaved. Page 6, lines 22-28 and page 14, lines 23-35 do discuss the leader sequence. However, it is not known if the hPTH (1-84) produced is free from any leader sequences.

D. Claims 26 and 29 are confusing since it is not clear whether the protein has been purified to greater than 90% before it was part of the claimed composition, or if the purified protein comprises greater than 90% of the composition.

E. Claim 29 recites the limitation "the protein." There is insufficient antecedent basis for this limitation in the claim. The rejection could be overcome by replacing "the protein" with "hPTH (1-84)."

F. Claim 34 is confusing because of the phrase "optimized consensus signal sequence." It is clear what a consensus signal sequence is, but it is not understood what constitutes an "optimized" sequence. Also, it is not understood how a DNA sequence can have the properties listed in parts (2)(i) – (2)(iii) of the claim since these are properties of proteins. Similarly, this claim can also be interpreted as either the hPTH having the properties of (2)(i) – (2)(iii), the optimized consensus sequence having the properties of (2)(i) – (2)(iii), or both of the proteins having these properties. Appropriate correction is required.

G. Claim 35 is confusing since it is not clear whether or not the recited signal sequences are already "optimized," or if these sequences need to be altered in order to be "optimized."

H. Claim 36 recites the limitation "the expression product." There is insufficient antecedent basis for this limitation in the claim.

I. Claim 36 is vague since it is not understood what the "expression product" is. It appears that the expression product is the translated signal sequence and hPTH. However, it is not known either (i) how PTH can direct secretion in yeast, (ii) if this secretion is the "expression product," or (iii) that PTH is affecting a general secretion pathway in said yeast. Appropriate correction is required.

6. Claim Rejections - 35 USC § 101 – statutory double patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

A. Claims 24-26 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 3 of prior U.S. Patent No. 5,420,242. This is a double patenting rejection. The claims of the present application recite compositions comprising recombinant human PTH and a leader sequence encoding Saccharomyces mating factor α1 lacking the yeast STE13 recognition site. Though the claims also recite the use of E. coli and yeast as well as a purity of greater than 90%, the claims reads *only* on the composition comprising PTH and a leader sequence. Therefore, regardless of the organism used to produce human PTH, the composition would be the same since the present claims are not drawn to methods. Claim 3 of the '242 patent recite an intact human PTH linked to Saccharomyces mating factor α1 where the tetramer Glu-Ala-Glu-Ala is omitted. Page 14, lines 23-31 of the instant application disclose that this STE13 recognition site *is* Glu-Ala-Glu-Ala. Therefore, since the claims of the present application do not recite what else is in the composition, therefore, this reads on the protein alone, or, in its broadest interpretation, the protein could be in the composition of "air." Regardless, the human PTH would be pure. Therefore, the claims of the application and patent are identical.

7. Claim Rejections - 35 USC § 101 – obviousness-type double patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

A. Claims 24-26 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 5,420,242. Although the conflicting claims are not identical, they are not patentably distinct from each other.

The claims of the present application recite compositions comprising recombinant human PTH and a leader sequence encoding Saccharomyces mating factor α1 lacking the yeast STE13 recognition site. Though the claims also recite the use of E. coli and yeast as well as a purity of greater than 90%, the claims reads *only* on the composition comprising PTH and a leader sequence. Therefore, regardless of the organism used to produce human PTH, the composition would be the same since the present claims are not drawn to methods. Claim 3 of the '242 patent recite an intact human PTH linked to Saccharomyces mating factor α1 where the tetramer Glu-Ala-Glu-Ala is omitted. Page 14, lines 23-31 of the instant application disclose that this STE13 recognition site *is* Glu-Ala-Glu-Ala.

Claim 3 of the patent does not teach that the PTH is in a composition. However, Example 8, column 19-20 and Examples 12 and 13, column 22 do teach that PTH has been used in solutions in order to perform the disclosed assays. Regardless, it would be obvious to one of ordinary skill in the art to place human PTH in a composition of, for example, water or a buffer solution for either diagnostic or

therapeutic purposes since the artisan would have only limited use for a lyophilized or crystallized protein.

8. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 24-29 and 34-37 are rejected under 35 U.S.C. 102(b) as being unpatentable by Keutmann et al. (reference A26 on Form PTO-1449). The claims are drawn toward compositions comprising human PTH (1-84). Keutmann et al. teach compositions of purified human PTH (1-84) (page 5723, last two paragraphs of the Introduction; first paragraph of "Materials and Methods"; Figure 7). In addition, all the methods in the reference use PTH in a solution, for example, the "column procedures and TLC" described on page 5724, left column. Applicants have claimed recombinant PTH made by various methods. However, the claims are drawn to compositions comprising the hPTH. Therefore, purified hPTH would be the same molecule regardless of how the hPTH is made, or whether or not it is recombinant, or what signal sequences were used. For this reason, Keutzmann et al. meet the limitation of the claims.

B. Claims 24-29 and 34-37 are rejected under 35 U.S.C. 102(b) as being unpatentable by Kimura et al. (reference A51 on Form PTO-1449). The claims are drawn toward compositions comprising human PTH (1-84). Kimura et al. teach compositions of human PTH (1-84) (Abstract). In addition, all the methods in the reference use PTH in a solution, which would be considered a composition. For example, the product was purified by CM-cellulose column chromatography, gel-filtration on Sephadex G-50 and in the final stage, by reversed phase HPLC. The structure of the final product was confirmed not only by

HPLC analysis but also by peptide mapping of tryptic digests on HPLC. Therefore, the PTH was in a composition. Applicants have claimed recombinant PTH made by various methods. However, the claims are drawn to compositions comprising the hPTH. Therefore, purified hPTH would be the same molecule regardless of how the hPTH is made, or whether or not it is recombinant, or what signal sequences were used. For this reason, Keutzmann et al. meet the limitation of the claims.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Landsman whose telephone number is (703) 306-3407. The examiner can normally be reached on Monday - Thursday from 8:00 AM to 5:00 PM (Eastern time) and alternate Fridays from 8:00 AM to 5:00 PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Official papers filed by fax should be directed to (703) 308-4242. Fax draft or informal communications with the examiner should be directed to (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert Landsman, Ph.D.
Patent Examiner
Group 1600
June 29, 2001

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